Preliminary Amendment

Please cancel claims 13-14, 17-18, 21-22, and 48. Please amend claims 1, 5, 16, 20, and 23. Please add new claims 51-67. The claims are as follows:

1. (Currently amended) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

exposing a fraction F of an exterior surface of a surface layer of the resistor to oxygen-comprising particles; and

oxidizing a portion of the surface layer by reacting said portion with said oxygen-comprising particles such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and wherein $F < 1$.

2-3. (Canceled)

4. (Previously presented) The method of claim 1, wherein a dimension of the resistor does not exceed about 1 micron.

5. (Currently amended) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

placing [[a]] the semiconductor structure in a chamber, ~~wherein the semiconductor~~

~~structure includes the resistor, and~~ wherein the resistor includes a surface layer having an exterior surface;

including a gas within chamber, wherein the gas includes oxygen-comprising molecules at an oxygen concentration;

exposing a fraction F of the exterior surface of the surface layer to the oxygen-comprising molecules;

heating a portion of the surface layer at a heating temperature, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and wherein a combination of the oxygen concentration and the heating temperature is sufficient to oxidize the portion of the surface layer by reacting said portion with the oxygen-comprising molecules, wherein heating the portion of the surface layer includes directing a beam into the portion of the surface layer such that the beam causes the heating of the portion of the surface layer, and wherein the beam is selected from the group consisting a beam of radiation and a beam of particles; and

oxidizing the portion of the surface layer by reacting said portion with the oxygen-comprising molecules~~, said oxidizing resulting in an increase in~~ such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer.

6-9. (Canceled)

10. (Previously presented) The method of claim 5, wherein the beam is the beam of radiation, and

wherein the radiation includes a laser radiation.

11. (Original) The method of claim 10, wherein $F < 1$.

12. (Original) The method of claim 10, wherein $F = 1$.

13-15. (Canceled)

16. (Currently amended) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

forming an anodization electrical circuit which includes: a DC power supply, an electrolytic solution comprising oxygen, the resistor partially immersed in the electrolytic solution such that a fraction F of an exterior surface of a surface layer of the resistor is immersed in the electrolytic solution, and a cathode partially immersed in the electrolytic solution, wherein the resistor is electrically coupled to a positive terminal of the DC power supply such that the resistor serves as an anode, and wherein the cathode is electrically coupled to a negative terminal of the DC power supply;

activating the DC power supply such that the DC power supply generates a voltage output, wherein the voltage output causes an electrolytic reaction in the electrolytic solution near the resistor, and wherein the electrolytic reaction generates oxygen ions from the oxygen in the electrolytic solution; ~~and~~

exposing the fraction F of the exterior surface of the surface layer of the resistor to the oxygen ions; and

oxidizing a portion of the surface layer by reacting said portion with the oxygen ions such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and wherein $F < 1$.

17-19. (Canceled)

20. (Currently amended) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

providing a chemical solution which includes the oxygen particles, wherein the oxygen particles are selected from the group consisting of oxygen-comprising liquid molecules, oxygen ions, and an oxygen-comprising gas dissolved in the chemical solution under pressurization;

immersing [[a]] the semiconductor structure in the chemical solution, ~~wherein the semiconductor structure includes the resistor, and~~ wherein a fraction F of an exterior surface of a surface layer of the resistor is immersed in the electrolytic solution; ~~and~~

exposing the fraction F of the exterior surface of the surface layer of the resistor to the oxygen ions; and

oxidizing a portion of the surface layer of the resistor by chemically reacting the oxygen particles with the portion of the surface layer such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of an

exterior surface of the surface layer, and wherein $F < 1$.

21-22. (Canceled)

23. (Currently amended) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a predetermined target resistance in terms of a value R_t and a tolerance ΔR_t for the electrical resistance of the resistor;

providing a semiconductor structure that includes the resistor;

exposing a fraction F of an exterior surface of a surface layer of the resistor to oxygen-containing particles; and

oxidizing a portion of the surface layer by reacting said portion with said oxygen-containing particles, ~~wherein said oxidizing increases~~ such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and

testing the resistor during the oxidizing step to determine whether the electrical resistance of the resistor is within $R_t \pm \Delta R_t$.

24. (Previously presented) The method of claim 23, wherein if during the testing step the electrical resistance of the resistor is determined to not be within $R_t \pm \Delta R_t$ then the method further comprises:

iterating such that each iteration of the iterating includes additionally executing the

exposing and oxidizing steps and additionally testing the resistor during the oxidizing step to determine whether R_2" is within $R_t \pm \Delta R_t$, wherein R_2" is a latest value of the electrical resistance of the resistor as determined by said testing; and

ending the iterating if R_2" is within $R_t \pm \Delta R_t$ or if $(R_2"-R_1)(R_t-R_2") < 0$, wherein R_1 is a latest value of the determined electrical resistance of the resistor immediately prior to said testing.

25-46. (Canceled)

47. (Previously presented) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

exposing a fraction F of an exterior surface of a surface layer of the resistor to nitrogen particles; and

nitridizing a portion of the surface layer by reacting said portion with said nitrogen particles such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer.

48. (Canceled)

49. (Previously presented) The method of claim 23, wherein $F < 1$.

50. (Previously presented) The method of claim 23, wherein F = 1.

51. (New) The method of claim 5, wherein the beam is the beam of particles.

52. (New) The method of claim 51, wherein the beam of particles is a beam of electrons.

53. (New) The method of claim 51, wherein the beam of particles is a beam of protons.

54. (New) The method of claim 51, wherein the beam of particles is a beam of ions.

55. (New) The method of claim 5, wherein said oxidizing results in a thickness of the oxidized portion of the surface layer being an increasing function of an energy flux of the beam.

56. (New) The method of claim 5, wherein a dimension of the exterior surface of the surface layer is no smaller than a smallest surface area on which the beam could be focused.

57. (New) The method of claim 5, wherein the gas is a flowing gas.

58. (New) The method of claim 5, wherein the gas is a non-flowing gas.

59. (New) The method of claim 5, wherein a dimension of the resistor does not exceed about 1 micron.

60. (New) The method of claim 10, wherein the laser radiation is a continuous laser radiation.

61. (New) The method of claim 10, wherein the laser radiation is a pulsed laser radiation.

62. (New) The method of claim 10, further comprising generating the laser radiation by a laser whose spot size is less than a surface area of the exterior surface of the surface layer.

63. (New) The method of claim 1, wherein the oxygen-comprising particles comprise oxygen-comprising molecules.

64. (New) The method of claim 1, wherein the gas is a flowing gas.

65. (New) The method of claim 1, wherein the gas is a non-flowing gas.

66. (New) The method of claim 1, wherein a dimension of the resistor does not exceed about 1 micron.

67. (New) A method for increasing an electrical resistance of a resistor, comprising the steps of:

providing a semiconductor structure that includes the resistor;

placing the semiconductor structure in a chamber, wherein the resistor includes a surface layer having an exterior surface;

including a gas within chamber, wherein the gas includes nitrogen-comprising molecules

at a nitrogen concentration;

exposing a fraction F of the exterior surface of the surface layer to the nitrogen-comprising molecules;

heating a portion of the surface layer at a heating temperature, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer, and wherein a combination of the nitrogen concentration and the heating temperature is sufficient to nitridize the portion of the surface layer by reacting said portion with the nitrogen-comprising molecules, wherein heating the portion of the surface layer includes directing a beam into the portion of the surface layer such that the beam causes the heating of the portion of the surface layer, and wherein the beam is selected from the group consisting a beam of radiation and a beam of particles; and

nitridizing the portion of the surface layer by reacting said portion with the nitrogen-comprising molecules such that an electrical resistance of the resistor is increased, wherein an exterior surface of said portion consists essentially of the fraction F of the exterior surface of the surface layer.